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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,990	10/31/2003	Dan Meacham	AIELP008	8866

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EXAMINER	
SHINGLETON, MICHAEL B	

ART UNIT	PAPER NUMBER
2817	

DATE MAILED: 02/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/698,990	MEACHAM, DAN	
	Examiner	Art Unit	
	Michael B. Shingleton	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 December 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) *9-24 and 26* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

MICHAEL B SHINGLETON
PRIMARY EXAMINER
ART UNIT 2817

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *08/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-8 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uriya 5,408,201 (Uriya)

Figure 1 and the relevant text of Uriya discloses a frequency synthesizer having a fixed frequency generator formed by the PLL 2 and reference signal generator 1. Note that when the frequency of elements 2 and 1 are selected, that this frequency generator generates a constant or fixed frequency. All this fixed frequency generator has in addition to that disclosed is that the fixed frequency of Uriya is that is selectable i.e. different channels can be selected. This is much like the tuner on a common TV. Figure 1 and the relevant text of Uriya also disclose a variable frequency generator in the form a FM modulator formed from elements 3 and 4. The variable frequency signal of Uriya is generated independently of the fixed frequency generator (Note the lack of any connection between these elements except at their outputs. This is the same as that shown in Figure 2A of the instant application.). Also note the mixer 5 of Urya combines the fixed frequency signal and the variable frequency signal to provide a "fast-hopping" output carrier frequency signal. As recited previously when the output frequency is switched from one to another this is referred to by Applicant as "frequency hopping". It is likewise noted that applicant has not provided a specific definition for the term "fast-hopping carrier frequency signal". Therefore the examiner must give the broadest reasonable interpretation to the claimed invention consistent with the specification (See MPEP 2111). The examiner's interpretation is further emphasized in that applicant only recites that "a variable frequency generator 252 that outputs a signal with frequencies that quickly varies" (See page 6 of the original specification.) The examiner also must give the plain meaning to the words used herein when applicant has not given a specific definition for these terms. Thus since applicant has not defined how fast "fast" is or how quick "quick" is and the plain meaning of the terms "fast" and "quick" mandates that these terms covers a huge range of "speeds". Accordingly, the frequency modulation of Uriya form one frequency to the next is seen as occurring at fast-hopping rate. Furthermore note that the structure of Uriya is fully capable of "fast-hopping". In

particular note that the elected invention of Figure 2A shows block diagrams or so called 'black boxes". No specific structure is associated with these boxes or diagrams and therefore the structure contained therein is conventional. Uriya also shows the use of black boxes for these elements and as these are conventional as well these elements could be just as capable of fast frequency hopping as that of applicant's invention. In the interest of compact prosecution while Uriya is silent on the speed as which the frequency changes, the selection of the speed is merely part of the optimum or workable range which has been long held to involve routine skill in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the changing of the frequency of Uriya to be within the fast-hopping rate, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105, USPQ 233.

With respect to claim 2 it goes without saying that the variable frequency generator has an output that is not connected back to the other components of the variable frequency generator (Note above the reference to Figure 1 that clearly shows this feature.).

With respect to claim 3, here the optimum or workable range is recited. Specifically, claim 3 recites that the variable frequency generator "settles" substantially faster than the fixed frequency generator. There is no specific definition given for the term "settles" and the claims are silent on where it settles from. It could be when the power is first applied as compared to each frequency generator or it could be when the power is first applied to the fixed frequency generator as compared to the time it takes for the variable frequency generator to settle when a change in frequency occurs. How fast a frequency generator settles is the result of a result effective variable. For example it could be because of the selection of the value of the capacitance in the oscillator circuit that determines how fast or how slow the oscillator "settles". It is merely common sense that the variable freuquency generator settles much more quickly than the fixed frequency generator for the variable frequency generator is to change frequency "quickly" in Uriya and the fixed frequency is to remain fixed. However, the selection of how fast an oscillator settles is merely the selection of the optimum or workable range that has been long held to only involve routine skill in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the variable frequency generator to settle faster than the fixed frequency generator, since it has been held that where the general conditions of a claim are disclosed in

the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105, USPQ 233.

With respect to claim 4, note the mixer referenced above.

With respect to claim 5, here a functional statement of intended use is recited. Applicant intended to utilize the frequency synthesizer in a transceiver. Uriya clearly utilizes the frequency synthesizer in a transmitter. However, it is well know (The examiner takes Offiical Notice.) to combine the functions of a receiver with a transmitter so as to make for a more compact overall structure a more reliable transmitting and receiving operation. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a receiver as part of the structure of Uriya as well so as to make for a more reliable and compact structure as is well-known in the art.

With respect to claim 6 here again applicant recites a function statement of intended use. Applicant intends to utilize the frequency synthesizer in a ultra-wide band system (UWB). As the structure of Uriya is fully capable of being used in a UWB system claim 6 does not present a patentable distinction over Uriya. Note that Uriya is silent on the bandwidth of the components that make up the device and the claim 6 does not recite where in a UWB system applicant intends to use the frequency synthesizer structure. The structure of Uriya could be utilized as a modulation means or as the main transmission structure itself. (See MPEP 2114, and 2111.02 and inparticular note In re Schreiber, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir 1997). In the interest of compact prosecution, the following interpretation is offered. The selection of the bandwidth of the system of Uriya is merely the selection of the optimum or workable range that has been long held to only involve routine skill in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the bandwidth of the system of Uriya to be that of UWB signal thereby making a UWB system, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105, USPQ 233.

With respect to claim 7, the modulator 4 is a fast switching component and the source 3 is a signal generator.

With respect to claim 8, the signal generator 3 of Uriya clearly generates a pluraity of signals i.e. different frequencies.

It goes without saying that the structure above includes the recited and claimed method steps because these steps are a part of the functioning of the device. However, in the interest of insuring that the examiner's position is not misunderstood the following analysis is offered.

The device disclosed or made obvious above involving Uriya clearly includes the steps of generating a fixed frequency (See fixed frequency generator noted above.) and generating a variable frequency signal (See variable frequency generator above.). Also as noted above it goes without saying that the fixed frequency signal is generated independently of the fixed frequency signal (Note Figure 1 of Uriya.). Uriya also includes the step of combining the fixed frequency signal and the variable frequency signal to provide the "fast-hopping carrier frequency" signal. (Note the mixer.) Also noted the reasoning as it relates to the "fast-hopping carrier frequency" for the reasoning above applies in the method claim(s) as well.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Note that Shoji et al. US2005/0249265 discloses a fast frequency hopping radio communication system that employs two independent frequency generators 35 and 38.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael B. Shingleton whose telephone number is (571) 272-1770.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal, can be reached on (571)272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306 and after July 15, 2005 the fax number will be 571-273-8300. Note that old fax number (703-872-9306) will be service until September 15, 2005.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MBS
February 14, 2005

Michael B Shingleton
Primary Examiner
Group Art Unit 2817